THE

GRAHAM JOURNAL,

OF HEALTH AND LONGEVITY.

VOL. I. BOSTON, TUESDAY, AUGUST 29, 1837. NO. 21.

THE GRAHAM JOURNAL.

Published weekly at Boston, Mass. by

DAVID CAMBELL.

Office No. 9, Washington Street, (five doors from Dock Square,)

TERMS.....$1,50 *a volume, or if paid promptly in advance,* $1,00 *will be received. The first vol. will contain* 300 pp.

*** *No subscriptions received for less than one volume—single numbers sold for three cents each.*

*** *Communications sent by mail to be* POST-PAID.

IS DISEASE ESSENTIAL TO THE NATURE OF MAN?

The consideration of contagious diseases leads to the same conclusions, as the remittent and intermittent fever. This is a large class of diseases, and they cut off constantly numerous victims from society. Plague, putrid and nervous fevers, (under the common denomination of typhus,) small pox, measles, chincough, scarlatina, (including the putrid sore throat,) syphilis and chicken pox, are the principal examples of the most severe diseases of this tribe. They are all of them produced by matter, or exhalations, from the human body. As there are societies of men, in which they are unknown, and as, for the most part, they appear to have arisen at no very remote periods, there can be no doubt, that these diseases are all of them artificial and factitious, the product of society; and not an essential condition annexed to the existence of man. The multitudes, therefore, who have perished by these diseases, may be truly said to have been the victims, not of nature,—not of any defect in the organization or powers of the human frame; but of the artificial modes of life, or of some other accidents and misfortunes, incident to society.

Scurvy is another disease, which has cut off vast multitudes of men. It has been satisactorily traced to an improper system of dieting, and particularly to the want of a due supply of fresh vegetable matter. It is, therefore, wholly an artificial disease.

The most familiar and well known example of disease being produced by locality, is that of Bronchocele or Goitre. It receives its name even from the districts which it infests: being called with us the Derbyshire Throat, and even the Coventry Throat. These are the enormous scrofulous tumors, which Hoffman says are caused by the use of hard and rough waters, in mountainous districts. The valleys of mountainous countries are its favorite residence, though it is by no means confined to such spots. The valleys where the disorder is most frequent, are those surrounded by very high mountains, sheltered from the currents of air, and exposed to the direct, and, still more to the vertical rays of the sun. Even under a tropical sun, the same concurrence of causes produces similar effects. In Savoy, Switzerland, among the Pyrenean mountains, in the island of Sumatra, and in certain parts of Tartary, the bronchocele is endemical, and there are many corresponding features of resemblance in the situation where it is found. M. Saussure asserts, that in the Alpine countries he never observed goitre in any places, which are elevated more than 500 or 600 toises (3200 and 3840 Eng. feet) above the level of the sea: he noticed them in those valleys where the heat is concentrated, and the air stagnates; and observed that they usually cease, where the valley terminates, and the country expands into a large plain.

In situations favorable to the production of this disease, it affects animals as well as the human species. Even dogs are said to be subject to it. It is asserted also, apparently upon good authority, that it affects both sheep and horned cattle.

This is the disease, which has, with the greatness confidence, been ascribed to the operation of unwholesome water, and it requires, indeed, a wonderful degree of scepticism to doubt, that this is, if not the sole, at least a powerful antecedent and concurring cause. Popular opinion attributes it to this every where; in Europe, in North and in South America: and many respectable writers have thought this opinion well founded. Hoffman says that a particular well in the village of Flach (*ditionis Tigurinæ,*) is called

by a term answering to *fons strumarum*, from its producing these swellings of the neck. Mr. De Luc, and Mr. Coxe, who have made many observations on this disease, have espoused this notion; and the much more weighty authority of the elder Heberden is on the same side. He says, 'I think that the cause of the Bronchocele is to be sought for in the water, a chemical investigation of which is therefore a great desideratum.' Those who have opposed it, appear not to have done so for sufficient reasons. It is confessed by Dr. Barton, who is not favorable to this opinion, 'that the water of that part of New York, in which I have observed the Goitre to prevail, besides holding in solution and diffusion a portion of calcareous earth, appeared to be otherwise very impure, and was certainly unpleasant to the taste. In other districts the same thing was noticed, still more strongly. Others, who speak slightingly of this opinion, content themselves with asserting, that the water was pellucid and well tasted. Such is the objection of Dr. Reeves; an objection certainly of very little weight, when unsupported by more particular examinations.

Mr. Coxe was informed by a surgeon practicing in Switzerland, that his principal method of preventing Goitre, consisted in removing the patients from the places, where the springs deposit a copious calcareous sediment, which is called by the inhabitants *Tuf;* and if that could not be effected, by forbidding the use of water that was not purified. This surgeon even practised distillation, for the purpose of purifying the water.

On this subject I can speak a little from my own experience. In the parish of Horne, in the county of Surry (a village six or seven miles to the south of Ryegate,) is the house of a laboring man, whose family consisted of five daughters. Of these four, whilst girls, become affected with bronchocele. In all, the disease was formed on this spot; but it continued, and even increased, after they had left it; going out to service. I saw one of them, a woman, perhaps of 24, married in the neighborhood; in her the gland continued swelled; but she said it was much diminished. The domestic water of this spot was a soft water, mingling readily with soap; it had a peculiar and not agreeable taste; it deposited a small sediment by boiling, and showed (by oxalate of ammonia) a slight calcareous impregnation; but no more, probably, than is common to all the domestic waters of the country. I used the process described in another place, by which I determined that it was much impregnated with putrescent matter, which I believe to be much more noxious than the calcareous impregnation; and I doubt not, therefore, that this water had an active share in forming the diseased constitutions of these females.

Without speaking positively on the antecedent causes of this disease, I think the most tenable hypothesis seems to be that which attributes it to the continued operation, with an inferior degree of force, of the causes which excite the intermittent and remittent fever. The village of Horne is low and damp, near the banks of the Mole; and formerly agues were common there. The heat and confined moisture of the places where it is endemical, point strongly to causes of this nature. Mr. Marsden says, that, in the valleys of the mountains of Sumatra, where this disease is common, there is a dense fog every morning, which is hardly dissipated by the rays of the sun till the afternoon. It is also affirmed, that where this disease is common, the bulk of the inhabitants are indolent in their disposition; and, in consequence, filthy, and having made little progress in civilization; they are said to be extremely wan and livid, and much subject to intermitting fevers. But whatever are the antecedent causes of bronchocele, it is certain that they must be applied for some years, before they produce their full effect; and that the effect will remain for a very considerable time after removing from the situation in which the disease was generated.

Whatever, too, are these causes, there can be no doubt that they are local causes; and some modifications of common elementary matter. Other examples of diseases, whose antecedent causes are local, might readily be adduced; but I have said enough for my immediate object. From the facts brought forward, therefore, I shall make, in this place, one or two conclusions, which, though very obvious, and conformable to many other facts in the history of disease, are little considered in speculation, and still less acted upon in the conduct of life.

Where bronchocele is common, a species of idiotcy of the worst kind, under the name of Cretinism, is also prevalent; and is obviously the effect of the same local circumstances. These miserable objects are radically defective in their organization; they are bereaved of all the powers, faculties, and privileges of humanity; and hardly preserve the form of human beings. We may therefore conclude, that there is no degree of morbid deviation from the healthy powers and structure of the body, which cannot be produced by the continued operation of local causes.

But under the very circumstances in which these monstrous deviations from nature are produced, many are equal to all the common offices of life, and enjoy apparent good health. In the human body itself, there is a certain degree of resisting power; in some stronger, in others more feeble; the

most susceptible are those which most suffer. This adds to the difficulties of the inquiry. Men cannot easily apprehend, that the things, which they support themselves with little or no evident uneasiness, can be the cause of disease, or of death, in others; and from hence arise contention, cavilling, and misplaced ridicule.

The diseases to which we have now particularly adverted, or at least the contagions, and those obviously originating in locality, form no inconsiderable portion of the whole number which infest society and occasion such an immense mortality. The small pox alone has often been the occasion of one-fourth part of the annual mortality; and it is not improbable, that, now, that it has been in a great degree suppressed by vaccination, the other contagions, and the diseases which seem to arise spontaneously in the system, will, in a great measure, supply its place. Now I would not dwell too strongly upon an argument merely analogical; nor say, that because this large class of diseases is evidently artificial, all others must be so likewise. Analogy is but a fallacious guide; nor ought it ever to be confided in when it is possible to arrive at direct evidence. But so much may be said with perfect fairness; as a large portion of the diseases which cut men off in civil society, are proved to be artificial; and as there is reason to suspect the same thing of others, in which so direct a proof cannot be obtained; there can be nothing extravagant or absurd in the supsition, that they all are artificial, and to be traced to some morbific causes, either of circumstances or manners. And should this hypothesis, after due investigation, prove correct, there can be nothing absurd, extravagant, or enthusiastic, in the hope, that, finally, successful methods may be discovered, either of treating them when formed, or at least, of preventing their formation.

Dr. Lambe.

HENRY D. PHELPS' TESTIMONY.

[The following communications with others which may appear in the Journal hereafter were originally furnished Mr. Graham and reserved by him for the second No. of his 'Æsculapian Tablets,' but which has not yet been published.]

MR. GRAHAM,

Dear Sir,—I have always, from my birth, been of delicate and feeble health, and from my earliest remembrance have been subject to habitual constipation of body, with an occasional diarrhœa. In the summer of 1830, my health suffered a very considerable depression. I became much emaciated, and subject to an almost continual pain in the upper part of my back and shoulders, pain in my left side, and a dreadful faintness and sinking and indescribable distress at the pit of my stomach, about eleven o'clock in the forenoon of every day. I had also a good deal of pain in my head, and, in fact, a general breaking down of my whole system. I consulted Dr. Pascalis, who told me that I had symptoms of weak lungs. As I was in the habit of being confined at my desk, as a book keeper, for ten hours a day, I concluded that it would be of benefit to me to journey. I therefore took a tour to the western part of this state. I travelled in the public stage coach beyond Buffalo, and then purchased a horse, and rode on horseback about seven hundred miles homeward. This had a very salutary effect on me, and when I arrived at home my health was much improved. I continued better for a while; but gradually relapsed into all my old complaints and difficulties, and became very feeble and languid, and excessively nervous, and low-spirited, and gloomy, and desponding, and exceedingly wretched. I felt wholly unfit for any kind of business, and my mental powers became so much enfeebled, that I felt incapable of mental application or continued thought.

Such was my miserable condition, when I commenced attending your lectures at Clinton Hall, in June, 1831. I immediately discontinued the use of tea and coffee, and in the course of a month, found a very decided change for the better in my health. My nervous irritability diminished, and the faintness and sinking distress at the pit of my stomach entirely disappeared. Pretty soon after this I commenced eating the Graham bread; and then the digestive powers of my stomach began to be more vigorous and active and healthful. My next step was to abandon all stimulants and condiments of every kind, and this proved an increasing benefit to my health. My despondency and gloom faded away, and my mind became more clear and active and vigorous. My bodily strength increased; and the pain in my back and shoulders and all other pains entirely left me, and I was every way much better and still improving, when the cholera broke out in the city, and my friends became clamorous against my mode of living, and assured me that I would certainly die with the cholera, if I did not eat flesh. The general cry was, 'eat flesh and live well or you will have the cholera.' The medical authority of the city seemed to be all this side of the question. The Board of Health urged the same doctrine; and then out came Doctor Pascalis, asserting with great confidence and much display of learning, that the cholera would probably increase its ravages in the city 'until it had decimated or even extirpated the whole class that subsisted with little or no animal food.'

All these clamors and authorities together, I confess, shook my confidence in the course I was pursuing; and partly by the entreaties of my friends, and partly by my

own fears, I was induced to call on Dr. Pascalis and take his advice. He said I must by all means eat flesh, and that I had better take an emetic to begin with. I know you will pity my weakness; but I will confess it; I yielded, and again commenced eating flesh, from which I had for some months entirely abstained. I went on gradually increasing in the use of flesh and becoming less strict in general diet, until the latter part of November last, (1832), when, after eating a very hearty dinner of roast beef, I was taken with an intermittent fever, which confined me to the house for a month. My attending physician (young Dr. Rodgers) acknowleged that it was the flesh which caused it.

After recovering from this sickness, I became, for awhile, more strict in my diet, according to your system, than ever before. My health gradually improved; but candor compels me, to my shame, to say, that I have been very unstable; going on very strictly for awhile and improving my health, till I began to feel vigorous and well; and then going astray, especially in quantity, till I found myself getting into difficulty, and then again, becoming more strict; and so I have continued on ever since; until the ninth of May last—nearly six weeks since, when, finding I could not avoid temptation and resist entreaties at my mother's table, I hired rooms and commenced keeping bachelor's hall, and became more systematic and more generally consistent in my habits than ever, upon your system. Since I have made this change my health has improved very considerably. I am in all respects better than before. My mind, spirits, strength, activity, &c. are all improved, and I feel much better for business. I am free from that drowsy and heavy feeling in the morning, and feel bright and cheerful when I awake. In short, I am every way better.

With much thankfulness of heart I am respectfully yours,

HENRY D. PHELPS, aged 23.

New York, June 16th, 1833.

HENRY N. WHITTLESY.

New York, June 6, 1833.

MR. GRAHAM,

Dear Sir,—For a number of years previous to your first course of lectures in this city, and especially during the summer season, I was always very feeble and used to lose much flesh; and in the summer of 1829, I was attacked with a severe pain in my bowels and was confined to the house near five weeks. After that time I was subject to a return of the same complaint as often as about once in six months; but I was never able to account for its coming on as it did. I always lived pretty regularly; and was not addicted to many of the *fashionable habits* that many of our young men practice; such as smoking cigars, chewing tobacco, &c.; nor did I make a very free use of mustard, pepper and other stimulants of the kind. But until I heard you lecture in June, 1831, I drank tea and coffee and made use of other articles which you said were *bad*. Since that time I have drank neither tea nor coffee; and have, generally speaking, lived on your system. My diet now consists chiefly of bread and milk. Since I first heard your lectures and adopted your system, two years ago, I have not had sickness enough to detain me from my business for an hour, up to the present time. And although I am not very fleshy, yet my health is now perfectly good, and I am much *stronger* than I formerly was.

With much gratitude to you under God, for my present enjoyment of health, I remain your sincere well-wisher,

HENRY N. WHITTLESY,
Crockery Merchant.

To Sylvester Graham, Esq.
Lecturer on the Science of Human Life.

THOMAS WALLACE.

New York, June 6, 1833.

MR. GRAHAM,

Sir,—In early life my health was ordinarily good, and continued so until I became a young man, and went to South America, where it became much impaired, and I returned home quite out of health, with a dry, hacking cough, great debility and general indisposition. In this situation I continued for about seven years, receiving no lasting benefit from the various remedies which I had recourse to for relief. About three years ago I gave up the use of flesh as an article of food, but still continued to drink tea and coffee. My symptoms were in some measure alleviated by this change, but my complaints still continued to afflict me very seriously. I was extremely weak, and much afflicted with excessive trembling, and frequent turns of faintness and lassitude. In this state of health, I went to hear the lectures which you first delivered in this city, at Clinton Hall, in June, 1831. I was fully convinced of the correctness of your views, and immediately adopted your system of living pretty strictly. My health soon began to improve, my cough left me, my strength and flesh increased, and in a few months I was in the enjoyment of good health; and by continuing in the same mode of living, my health has continued to improve till the present time; and I am now free from every ailment, and blessed with excellent health in every respect.

May you richly enjoy the blessings which you are so eminently instrumental in securing to others. Very gratefully yours,

THOMAS WALLACE, aged 25.

MICROSCOPIC EXAMINATIONS.

Extracted from Beaumont's Experiments.

The following Microscopic examinations were made with Jones' Compound Microscope, in presence of Professor Dunglison and of Capt. H. Smith, of the Army. They afford, however, very little information on the subject of digestion, and show that no very satisfactory results are attainable from microscopic examinations of chyme.

I. *Pure gastric juice*, exhibited the appearance of water, except that there were perceptible a very few minute globules.

II. The chymous product of the *gastric juice and unmasticated lean beef*, exhibited globules of various sizes, resembling those of the blood, having a transparent centre, and opaque margin, with various very fine filaments, of apparently undigested fibrine.

III. Product of *gastric juice and albumen*—exhibited appearances resembling, considerably, those presented by gastric juice alone—no distinct globular arrangement.

IV. Chyme from *gastric juice and tendon of veal*—exhibited numerous minute, apparently fleshy particles—no globular appearance.

V. Chyme from *gastric juice* and *fowl* and *bread*—In the comparatively clear portion, (taken without shaking the vial) exhibited a few undissolved particles, and very few globules. A portion taken after shaking the vial, exhibited considerably more particles, and a greater number of globules.

VI. The product of the same kind of aliment, (*fowl* and *bread*) macerated in water, exhibited numerous undissolved particles, with few globules;—the globules not so regularly formed, as in the foregoing experiment.

VII. Product of *gastric juice*, and *soup, made from fresh beef*, exhibited globules extremely numerous, and distinctly formed, far more so, than in any of the preceding experiments—and a few particles of meat.

VIII. *Impure gastric juice*, or that with an *admixture of green bile*, when taken from the stomach, exhibited numerous amorphous particles, with few globules.

IX. Chyme, *artificially formed*, from *pork* and *bread*, exhibited numerous globules of different sizes, apparently oily.

X. *Chymous product* of *gastric juice* and *fat pork, formed in the stomach*, exhibited a beautiful appearance of large transparent globules, of different sizes, evidently oily.

XI. *Fat pork, macerated in pure water*, presented appearances of globules similar to those in the products of digestion.

Spirits a Poison.—Sir Astley Cooper says, 'I never suffer ardent spirits in my house, thinking them evil spirits; and if persons could witness the white livers, the dropsies, and the shattered nervous systems which I have seen, as the consequence of drinking them, they would be aware that spirits and poison are synonymous terms.'

USE OF THE CUTICLE AND MUCOUS COAT.

By one of the beneficent provisions, calculated to afford increased protection according to the necessities of the individual, it happens that, when a part is much used, the cuticle covering it becomes thicker and thicker within certain limits, till in extreme cases it becomes as thick, hard, and resisting as horn. It is this thickening of the epidermis on the lady's finger that alone enables her to wield with impunity that important instrument the needle. And it is the same thickening that fits the blacksmith and the mason, the stone-breaker and the boatman, to ply their trades, without that painful blistering which the young apprentice or unaccustomed laborer so regularly undergoes, and which must have continued to recur forever, had the cuticle been organized with blood-vessels and nerves, or not subjected to this law of becoming thicker wherever increased protection is required.

Another modification of the cuticle to suit a modification of circumstances is that observed in the nails. These belong to the scarf-skin, and separate with it; and, like it, they have neither blood-vessels nor nerves, and may be cut or bruised without pain. When the hand or foot is macerated in water, the nails and the cuticle show their identity of organization, by separating together from the dermis or true skin below. The nails, like the cuticle, serve chiefly to protect the subjacent parts from injury; and, accordingly, in those lower animals whose manner of life subjects their feet to continual pressure, and requires no nice exercise of touch, Nature has provided horny and resisting hoofs for their protection, instead of a merely thickened epidermis.

To produce thickening of the cuticle, exercise must be gradual, and not too severe. If, for example, a person takes a very long walk, rows a boat, or makes use of a heavy hammer for a few hours, without having been accustomed to such an effort, there is no time for the cuticle to thicken, and defend itself from the unusual friction. The parts below, being inadequately protected, become irritated and inflamed, and throw out a quantity of watery fluid or serum on their surface, which raises up the cuticle in blisters, and by making it painful to continue the pressure, obliges the person to desist from an exercise which, if continued, would evidently soon alter the structure of the sentient nervous filaments, and forever unfit them for their proper uses; so that even in this result beneficence and wisdom are prominently displayed.

Immediately beneath the scarf-skin, and between it and the true skin, is the *mucous coat, rete mucosum*, or *mucous network*, which is remarkable chiefly as being the seat of

the coloring matter of the skin. It is seen with difficulty on dissection, except in Negroes, in whom it is thick. It is exceedingly attenuated in albinos, and is in fact thick in proportion to the depth of color. It is destitute of blood vessels and nerves, but, like the epidermis, is permeable by other bodies.

The coloring matter is said to be the same as that of the blood; Davy and Blumenbach, however, regard it as carbon.

From all that is known regarding the mucous coat, it may be viewed generally as a thin soft covering, placed between the outer and the inner skin, to protect the nerves and vessels of the latter and give them requisite softness and pliancy. Being of a dark color in the Negro, it has been supposed to diminish the heating influence of the sun's rays in tropical climates by the higher radiating power which is possessed by a black than by a light surface; but there is reason to doubt the soundness of the theory, for black is well known to excel in *absorbing*, as well as in radiating, heat; and late experiments on the coast of Africa seem to show, that the temperature of the Negro is actually about two degrees higher than that of the European under the same circumstances.

The mucous coat is the seat of the beautiful and variegated coloring observed in the skins of many fishes and other animals, in which it has often a high and almost metallic splendor. *Combes' Princ. of Physiol.*

OF WHAT IS THE HUMAN BODY COMPOSED?

The ultimate elements of which the human body is composed, are azote, or nitrogen, oxygen, and hydrogen; (gaseous fluids;) and carbon, phosphorus, calcium, sulpher, sodium, potassium, magnesium, and iron, (solid substances). These bodies are called elementary and ultimate, because they cannot be resolved by any known process into more simple substances. These elementary bodies unite with each other in different proportions, and thus form compound substances. A certain proportion of azote uniting with a certain proportion of oxygen, hydrogen and carbon, forms a compound substance possessing certain properties. Another proportion of azote uniting with a different proportion of oxygen, hydrogen, and carbon, forms another compound substance possessing properties different from the former. Oxygen, hydrogen, and carbon, uniting in still different proportions without any admixture of azote, form a third compound possessing properties different from either of the preceding. The compounds thus formed by the primary combinations of the elementary substances with each other are called *proximate principles*.

Each proximate principle constitutes a distinct form of animal matter, of which the most important are named gelatin, albumen, fibrin, oily or fatty matter, mucus, urea, pichromel, osmazome, resin, and sugar.

By chemical analysis it is ascertained that all the proximate principles of the body, however they may differ from each other in appearance and in properties, are composed of the same ultimate elements. Gelatin, for example, consists (in 100 parts) of azote 17, oxygen 27 and one-fourth, hydrogen 8, carbon 47 and three-fourths. The elementary bodies uniting in the above proportions form an animal substance, soft, tremulous, solid, soluble in water, especially when heated, and on cooling, which may be considered as its distinctive property, separating from its solution in water into the same solid substance, without undergoing any change in its chemical constitution.

Again, albumen consists of azote 15 and three-fourths, oxygen 23 and three-fourths, hydrogen 7 and one-half, carbon 53 parts. The elementary bodies uniting in these different proportions, there results a second proximate principle, an adhesive fluid, transparent, destitute of smell and taste, miscible in water, but when subjected to a temperature of about 165°, converted into a solid substance no longer capable of being dissolved in water. This conversion of albumen from a fluid, which is its natural state, into a solid, by the application of heat, is called coagulation. It is a process familiar to every one. The white of an egg is nearly pure albumen, naturally a glairy and adhesive fluid; by boiling, it is coagulated into a white and firm solid.

In like manner fibrin consists of azote 20, oxygen 19 and one-half, hydrogen 7, carbon 53 and one-half parts, forming a solid substance of a pale whitish color and firm consistence, the peculiar character of which is its disposition to arrange itself into minute threads or fibres.

On the other hand, fat or oil, which is a fluid substance of a whitish yellow color, inodorous, nearly insipid, unctuous, insoluble in water and burning with rapidity, consists of a larger proportion of hydrogen, a small proportion of oxygen, and a still smaller proportion of carbon, without any admixture of azote.

From this account of the composition of the proximate principles, which it is not necessary to extend farther, it is manifest that all of them consist of the same ultimate elements, and that they derive their different properties from the different proportions in which their elements are combined.

The ultimate elements that compose the body are never found in a separate or gaseous state, but always in combination in the form of one or other of the proximate principles.

In like manner, the proximate principles never exist in a distinct and pure state, but each is combined with one or more of the others. No part consists wholly of pure albumen, gelatin, or mucus, but albumen is mixed with gelatin, or both with mucus.

Simple or combined, every proximate principle assumes the form either of a fluid or of a solid, and hence the most general and obvious division of the body is into fluids and solids. But the terms fluid and solid are relative, not positive; they merely express the fact that some of the substances in the body are soft and liquid compared with others which are fixed and hard; for there is no fluid, however thin, which does not hold in solution some solid matter, and no solid, however dense, which does not contain some fluid.

Fluids and solids are essentially the same in nature; they differ merely in their mode of aggregation; hence the easy and rapid transition from the one to the other which incessantly takes place in the living body, in which no fluid long remains a fluid, and no solid a solid, but the fluid is constantly passing into the solid, and the solid into the fluid.

The relative proportion of the fluids in the human body is always much greater than that of the solids; hence its soft consistence and rounded form. The excess, according to the lowest estimate, is as 6 to 1, and according to the highest, as 10 to 1. But the proportion is never constant; it varies according to the age and to the state of the health. The younger the age, the greater the preponderance of the fluids. The human embryo, when first perceptible, is almost wholly fluid; solid substances are gradually but slowly superadded, and even after birth the preponderance is strictly according to age; for in the infant, the fluids abound more than in the child: in the child, more than in the youth; in the youth, more than in the adolescent; in the adolescent, more than in the adult; and in the adult, more than in the aged. Thus, among the changes that take place in the physical constitution of the body in the progress of life, one of the most remarkable is the successive increase in the proportion of its solid matter; hence the softness and roundness of the body in youth; its hard, unequal and angular surface in advanced life; its progressively increasing fixedness and immobility in old age, and ultimate inevitable death.

The fluids are not only more abundant than the solids, but they are also more important, as they afford the immediate material of the organization of the body; the media by which both its composition and its decomposition are effected. They bear nourishment to every part, and by them are carried out of the system its noxious and useless matters. In the brain they lay down the soft and delicate cerebral substance; in the bone, the hard and compact osseous matter; and the worn out particles of both are removed by their instrumentality. Every part of the body is a laboratory in which complicated and transforming changes go on every instant; the fluids are the materials on which these changes are wrought; chemistry is the agent by which they are affected, and life itself is the governing power under whose control they take place.

The fluids, composed principally of water holding solid matter in solution, or in a state of mechanical division, either contribute to the formation of the blood, or constitute the blood, or are derived from the blood; and after having served some special office in a particular part of the system, are returned to the blood; and according to the nature and proportion of the substances they contain, are either aqueous, albuminous, mucous, gelatinous, fibrinous, oleaginous, resinous, or saline.

When the analysis of the different kinds of animal matter that enter into the composition of the body has been carried to its ultimate point, it appears to be resolvable into two primitive forms; first, a substance capable of coagulation, but possessing no determinate figure, and secondly, a substance having a determinate figure and consisting of rounded particles. The coagulable substance is capable of existing by itself; the rounded particles are never found alone, but are invariably combined with coagulated or coagulable matter. Alone or combined with the rounded particles, the coagulable matter forms when liquid, the fluids, when coagulated, the solids.

When solid, the coagulable substance is disposed in one of two forms, either in that of minute threads or fibres, or in that of minute plates or laminæ; hence every solid of the body is said to be either fibrous or laminated. The fibres or laminæ are variously interwoven and interlaced, so as to form a net-work or mesh; and the interspaces between the fibres or laminæ are commonly denominated areolæ or cells.

This concrete substance, fibrous or laminated, is variously modified either alone or in combination with the rounded particles. These different modifications and combinations constitute different kinds of organic substance. When so distinct as obviously to possess a peculiar structure and peculiar properties, each of these modifications is considered as a separate form of organized matter, and is called a PRIMARY TISSUE.

Family Magazine.

A CURE FOR WEAK EYES.—ANSWER TO S. T. E.

MR. CAMBELL,

Dear Sir,—'S. T. E.' in the last Journal, asks advice respecting the manner of curing weak eyes. I have received no diploma for 'such cases made and provided,' but I offer my advice in accordance with the general command of the great Physician to 'do good and to communicate;' and as I shall not have occasion to employ a legal process to collect a *fee*, perhaps the absence of the diploma may not spoil the advice; and 'S. T. E.' is welcome to take it for what it is worth.

I was for several years afflicted with weak eyes, commencing with inflammation. I went through the same course of blisters on the back of the neck, leeching on the temples, eye-waters, &c. adhering to my old habits, but experienced no benefit, and finally abandoned all doctoring, and came to the conclusion that it was my lot to have weak eyes all my days. For ten or twelve years I endured sufferings which none but those who have experienced them can conceive. I consulted the distinguished superintendent of the Eye and Ear Infirmary in Boston, and was told that recovering the use of my eyes could be secured only by giving them *rest*. I tried it as well as I could, but without permanent relief; and finally tried to reconcile myself to a life of virtual blindness. My general health was bad, and with the hope of benefiting this, without thinking much of my eyes, I adopted what is called the 'Graham system.' My eyes are now *well;* and I could read or write all night without suffering.

'S. T. E.' need have no doubt of the *entire* recovery of his eyes if he adopts a correct diet and correct general habits and perseveres. Let him avoid every thing stimulating; water, his only drink, and his food, plainly cooked ripe vegetables and farinaceous articles, with the ripe fruits *of this section of country;* coarse bread being recommended as indispensable, avoiding pepper, mustard, vinegar, spices and the whole class of condiments, the less of salt, molasses and sugar the better, even if he tapers them down to the 'little end of nothing,' taking never more than three meals in a day, and nothing but water between meals, taking the meals about 5 and a half or 6 hours apart, the first at least one hour after rising, and the last at least 4 hours before retiring; let him take as much exercise as possible in the open air, bathe his whole body once a day in cold water, taking care to do it in such a manner as not to feel chilly after it; let him give his cream Tartar, epsom salts, all drugs to the dogs, and be temperate in all things; and he may rest assured that a short time will return to him the use of his eyes. We would not presume to say how soon he may recover, nor absolutely that he will at all. We only say that if any means whatever can cure his eyes we sincerely believe these will; and that as he partially or wholly tries the means, he may expect partially or wholly a cure.

Of one thing 'S. T. E.' and indeed all others who are similarly afflicted may be assured—that there is no necessity that he or they should go 'mourning all their days' under troubles of this kind. It is rarely the case that persons of his age, though for years they have been squandering their vital energies, do not retain enough to carry them through years of even happy existence, excepting, of course, those cases in which organic disease has fastened upon the vitals. He will find that his 'humor' will very soon vanish before the bathing and the flesh-brush, if he does not *feed* it with 'good things.' And if these recommendations should meet the eyes of others suffering with humors, whether they have settled in their eyes or elsewhere, if they will only try the means, they will find that if they are not absolutely incurable they will derive immediate and permanent benefit.

A FORMER SUFFERER.

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MR. BIRD'S ADDRESS

DELIVERED before the American Physiological Society, June 1st, 1837. Just published and for sale by Marsh, Capen & Lyon, No. 133 Washington Street. Members of the Society supplied gratuitously.

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